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**Application No. B0268**

## **Staff Summary**

**AltAir Paramount, LLC**  
**AltAir Paramount, LLC, Paramount, California**  
**Renewable Diesel, Renewable Naphtha, and Renewable Jet Fuel from Animal Fat**

**Joint Applicants:** JBS Brooks, Alberta, Canada (F1597), JBS Greeley, Colorado (F00148), JBS Hyrum, Utah (F00209), JBS Dinmore, Queensland, Australia (F00136)

Deemed Complete Date: 12/21/2021

Posted for Comment Date: 3/10/2022

CI Certified Date: TBD

CI Start Date: TBD

## **Pathway Summary**

AltAir Paramount, LLC (AltAir) has applied for eighteen Tier 2 fuel pathways for Renewable Diesel, Renewable Naphtha, and Renewable Jet Fuel derived from rendered animal fat and processed at their facility located at Paramount, California. AltAir sources rendered inedible animal fat from multiple integrated meatpacking and rendering facilities owned by JBS<sup>1</sup> and from a variety of other sources. JBS is a joint applicant with AltAir on this application.

Rendered animal fat is pretreated at the Altair facility to remove oxygen, sulfur and other impurities which could deactivate catalyst or impact product yields. The rendered animal fat is then hydrotreated in a reactor to produce both liquid and gaseous products. The liquid stream is distilled to produce renewable diesel, renewable naphtha, and renewable jet fuel. Propane and other light end distillates in the gaseous stream are consumed in the renewable diesel production process. Process energy used includes grid electricity, natural gas, and hydrogen gas.

## **Tallow Rendering**

This application includes site-specific rendering process energy values<sup>2</sup> for inedible animal fat sourced from the JBS facilities. All energy data for the facilities are collected from dedicated meters and supporting information to enable assigning of appropriate emissions to the rendering operation. At the rendering facility, natural gas and biogas collected from an onsite wastewater treatment plant is combusted in a

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<sup>1</sup> [JBS Foods \(jbsfoodsgroup.com\)](https://www.jbsfoodsgroup.com)

<sup>2</sup> Deemed confidential by the joint applicants

boiler to produce steam for the rendering process. Emission factor of biogas was calculated by the Tier 1 Simplified CI Calculator for Biomethane from Anaerobic Digestion of Wastewater Sludge. A heat exchanger recovers energy from the rendering process to preheat process water used for cleaning and sterilization within the packing plant. Energy credit from the heat recovery system is calculated as a function of the process water mass flow rate, heat capacity and temperature differential across the heat exchanger. Rendering emissions are assigned proportionally between rendered animal fat and bone meal products using mass-based allocation.

### Carbon Intensity of Fuel Type Pathways

The CI is determined from life cycle analysis conducted using a modified version of the Board-approved Tier 1 Simplified CI Calculator for Biodiesel and Renewable Diesel.

Well-to-wheel GHG emissions of this pathway were modelled using the modified Tier 1 Simplified Carbon Intensity Calculator for Biodiesel and Renewable Diesel. The table lists the proposed Carbon Intensities (CIs), using three (3) months of operational data for these pathways. These pathways will accordingly be classified as provisional until 24 months of operational data become available.

#### Proposed Pathway CIs

Pathway Number	Fuel & Feedstock	Pathway FPC	Pathway Description	Carbon Intensity (gCO <sub>2</sub> e/MJ)
B026801	Animal Fat to Renewable Diesel	TBD	North American Sourced Rendered Animal Fat transported by rail to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Diesel produced in California (Provisional)	32.93
B026802	Animal Fat to Renewable Diesel	TBD	Site-Specific Rendered Animal Fat Sourced from JBS Brooks Alberta Canada transported	18.87

Pathway Number	Fuel & Feedstock	Pathway FPC	Pathway Description	Carbon Intensity (gCO <sub>2</sub> e/MJ)
			by rail to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Diesel produced in California (Provisional)	
B026803	Animal Fat to Renewable Diesel	TBD	Site-Specific Rendered Australian Sourced Animal Fat transported by truck and ocean tanker to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Diesel produced in California (Provisional)	38.43
B026804	Animal Fat to Renewable Diesel	TBD	Site-Specific Rendered Animal Fat Sourced from JBS Dinmore Australia transported by truck and ocean tanker to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Diesel produced in California (Provisional)	29.26

Pathway Number	Fuel & Feedstock	Pathway FPC	Pathway Description	Carbon Intensity (gCO <sub>2</sub> e/MJ)
B026805	Animal Fat to Renewable Diesel	TBD	Site-Specific Rendered Animal Fat Sourced from JBS Greely Colorado transported by rail to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Diesel produced in California (Provisional)	19.54
B026806	Animal Fat to Renewable Diesel	TBD	Site-Specific Rendered Animal Fat Sourced from JBS Hyrum Utah transported by Truck and rail to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Diesel produced in California (Provisional)	15.64

Pathway Number	Fuel & Feedstock	Pathway FPC	Pathway Description	Carbon Intensity (gCO <sub>2</sub> e/MJ)
B026807	Animal Fat to Renewable Naphtha	TBD	North American Sourced Rendered Animal Fat transported by rail to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Naphtha produced in California (Provisional)	32.93
B026808	Animal Fat to Renewable Naphtha	TBD	Site-Specific Rendered Animal Fat Sourced from JBS Brooks Alberta Canada transported by rail to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Naphtha produced in California (Provisional)	18.87

Pathway Number	Fuel & Feedstock	Pathway FPC	Pathway Description	Carbon Intensity (gCO <sub>2</sub> e/MJ)
B026809	Animal Fat to Renewable Naphtha	TBD	Site-Specific Rendered Australian Sourced Animal Fat transported by truck and ocean tanker to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Naphtha produced in California (Provisional)	38.43
B026810	Animal Fat to Renewable Naphtha	TBD	Site-Specific Rendered Animal Fat Sourced from JBS Dinmore Australia transported by truck and ocean tanker to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Naphtha produced in California (Provisional)	29.26

Pathway Number	Fuel & Feedstock	Pathway FPC	Pathway Description	Carbon Intensity (gCO <sub>2</sub> e/MJ)
B026811	Animal Fat to Renewable Naphtha	TBD	Site-Specific Rendered Animal Fat Sourced from JBS Greeley Colorado transported by rail to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Naphtha produced in California (Provisional)	19.54
B026812	Animal Fat to Renewable Naphtha	TBD	Site-Specific Rendered Animal Fat Sourced from JBS Hyrum Utah transported by Truck and rail to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Naphtha produced in California (Provisional)	15.64

Pathway Number	Fuel & Feedstock	Pathway FPC	Pathway Description	Carbon Intensity (gCO <sub>2</sub> e/MJ)
B026813	Animal Fat to Renewable Jet Fuel	TBD	North American Sourced Rendered Animal Fat transported by rail to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Jet Fuel produced in California (Provisional)	32.93
B026814	Animal Fat to Renewable Jet Fuel	TBD	Site-Specific Rendered Animal Fat Sourced from JBS Brooks Alberta Canada transported by rail to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Jet Fuel produced in California (Provisional)	18.87



Pathway Number	Fuel & Feedstock	Pathway FPC	Pathway Description	Carbon Intensity (gCO <sub>2</sub> e/MJ)
B026815	Animal Fat to Renewable Jet Fuel	TBD	Site-Specific Rendered Australian Sourced Animal Fat transported by truck and ocean tanker to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Jet Fuel produced in California (Provisional)	38.43
B026816	Animal Fat to Renewable Jet Fuel	TBD	Site-Specific Rendered Animal Fat Sourced from JBS Dinmore Australia transported by truck and ocean tanker to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Jet Fuel produced in California (Provisional)	29.26

Pathway Number	Fuel & Feedstock	Pathway FPC	Pathway Description	Carbon Intensity (gCO <sub>2</sub> e/MJ)
B026817	Animal Fat to Renewable Jet Fuel	TBD	Site-Specific Rendered Animal Fat Sourced from JBS Greeley Colorado transported by rail to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Jet Fuel produced in California (Provisional)	19.54
B026818	Animal Fat to Renewable Jet Fuel	TBD	Site-Specific Rendered Animal Fat Sourced from JBS Hyrum Utah transported by Truck and rail to Renewable Diesel plant in Paramount, California; Natural Gas, Grid Electricity, and Hydrogen; Renewable Jet Fuel produced in California (Provisional)	15.64

## Operating Conditions

The certified CI value in the above table may be used to report and generate credits for fuel quantities that are produced at the facility in the manner described in the applicant's Life Cycle Analysis (LCA) report, and dispensed for transportation use in California, subject to the following requirements and conditions:

1. Fuel pathway holders are subject to the requirements of the California Air Resources Board's (CARB) Low Carbon Fuel Standard (LCFS) regulation, which appears at sections 95480 to 95503 of title 17, California Code of Regulations. Requirements include ongoing monitoring, reporting, recordkeeping, and third-party verification of operational CI and a controlled process for providing product transfer documents or other similar records to counterparties or CARB. All specified source feedstocks reported in the fuel production process must meet chain-of-custody requirements specified in section 95488.8(g)(1)(B).

2. Moisture content of feedstock is subject to monitoring, reporting, and verification. Either the representative method or the conservative method may be used. The representative method calculates monthly values for weighted average moisture content from financial transaction records or internal measurements by the fuel producer. The conservative method assumes feedstock moisture content is zero, based on the lower value of the range for allowable moisture content.

### 3. Co-Products Testing

This Operating Condition is applicable to user-defined input values for co-products in Field 2.17.a: "Energy Density of Renewable Naphtha Production" (LHV, Btu/lb) and "Energy Density for Renewable Jet Fuel" (LHV, Btu/lb) of the 'RD-Production' tab in the Tier 1 Simplified CI Calculator for BDRD.

These input values shall be determined by Gas Chromatography (GC) analyses or other CARB approved method (e.g. correlation between LHV and specific gravity of renewable naphtha), and shall be reported as a Representative Value, or a Conservative Value with the following constraints, respectively:

- a. The Representative Value of Energy Density shall be based upon CARB's approved sampling and analysis plan used to determine the user-defined input value for the Energy Density of Co-Products renewable naphtha, and renewable jet fuel co-produced and exported for sale under this fuel pathway. The applicant's proposed sampling and analysis plan shall take into account the variability of the facility-specific material attribute in selecting the sampling method, frequency of analysis or measurements, and the calculation method used to determine the composite, representative, user-defined input value. Results derived on a higher heating value (HHV) basis shall be converted to a lower heating value (LHV) basis using a factor approved by CARB. Inputs must be site-specific: results from one facility's co-product analysis may not be reported in applications or Annual Fuel Pathway Reports for any other facility's pathways.

- b. The Conservative Value for Energy Density is the lowest result of GC analyses or other CARB approved method reduced by a conservative margin of 5 percent. Lower values for co-product energy density reduce co-product credit and correspond to higher, more conservative, CI values. The value may be determined from analysis of an initial subset of facility-specific results provided to CARB at the time of application. The applicant must demonstrate that the selected value is conservative, relative to analyses of the facility's specific material and peer reviewed literature values for the material. The fuel pathway will be certified with an operating condition requiring a minimum sampling and analysis frequency, to be determined during the certification process on the basis of the initial subset of results provided with the application package. If any analysis results in a lower value than the approved conservative value, the user-defined input value must be updated in the subsequent Annual Fuel Pathway Report. A fuel pathway holder may transition from a conservative value to a representative value for the subsequent Annual Fuel Pathway Report if approved by CARB prior to the report due date.

#### 4. Sampling and Analysis Plan

The applicant shall develop a sampling and analysis plan for each fuel production facility, to demonstrate to CARB the validity of composited values used for all relevant user-defined inputs. At a minimum, the proposed sampling and analysis plan shall include the following:

- a. Description of the material attribute(s) specified for all relevant user defined inputs (e.g., Energy Density LHV (Btu/lb) of the co-product streams.
- b. The properties (e.g., composition, vapor pressure, density etc.) of the co-product streams.
- c. The proposed sampling frequency, given as a number of samples per time period and per unit of fuel produced (e.g., every 100,000 gallons), to monitor the material attribute and its variability. The applicant must indicate the method of compositing collected samples with due consideration to changes in production cycles (batch runs, or continuous), changes in type of feedstock, seasonal availability of feedstocks, and disruptions to the production process (startup and shutdown).
- d. Documentation of analytical results must identify the samples by date, type, location, and fuel production batch.
- e. The test methods employed (standard or industry recognized) shall be described for all analytical measurements to support the use of a composited value for a user defined input.
- f. Individual GC test results shall be averaged per the stated frequency (i.e. time period) in the Sampling and Analysis plan. Averages and variance shall be

provided for each time period reviewed, and individual GC test reports shall be provided as requested by the verification body or CARB.

5. The following fuel pathways were certified by CARB in 2019 and 2020 are not subject to third-party validation of the 2021 application: fuel pathway with joint applicant JBS in Brooks, Alberta; North American animal fat; Australian animal fat; JBS in Greeley, Colorado; Swift/JBS in Hyrum, Utah; and JBS Dinmore in Queensland, Australia.

### **Staff Analysis and Recommendation**

Staff has reviewed the provisional application and has replicated, using a modified Tier 1 Simplified Carbon Intensity Calculator for Biodiesel and Renewable Diesel, the CIs value calculated by the applicant. SCS Global Services (H3-20-017) submitted a positive validation statement. Staff recommends this application be considered for certified after all the comments received during the 10-day comment period are addressed satisfactorily by the applicant. The certification is subject to the operating conditions set forth in this document.

### **Comments and Certification**

TBD